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ABSTRACT

Exploring relationships between organizational and personal characteristics and responses to innovation, this study surveyed teachers--including identified innovators--in 10 small rural secondary schools. The research was informed by a developing theory viewing receptivity, or variation in acceptable conditions of risk, as determined by the interaction of organizational and personal factors. The survey questionnaire consisted primarily of instruments used in prior studies, including the Bridges Receptivity to Change Scale and the Moeller Sense-of-Power Scale. Discriminant analysis showed that innovators were more receptive, experimenting, professionally active, and had a higher sense of power. Multiple regression identified personal and organizational variables predictive of receptivity. Receptive teachers differed from innovators in their uncertainties about principal support and their power to influence school decision-making. Results included sex-based differences that precluded single group analysis of relationships among predictor variables. It is concluded that it may be possible to manipulate variables associated with receptivity to encourage teachers to assume the risks of change. (Author/MJL)

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RECEPTIVITY TO CHANGE IN SMALL SCHOOLS: A STUDY OF TEACHERS' WILLINGNESS TO ACCEPT THE RISKS OF INNOVATION

by

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Running Head: Receptivity to Change

EA 016 615

RECEPTIVITY TO CHANGE IN SMALL SCHOOLS: A STUDY OF TEACHERS' WILLINGNESS TO ACCEPT THE RISKS OF INNOVATION

Abstract

Not all people in organizations are unreceptive to change. A developing theory views receptivity, or variation in acceptable conditions of risk, as determined by the interaction of organizational and personal factors. This exploratory study used data from a survey of teachers and identified innovators in small secondary schools, institutions where decline is forcing need for change. Discriminant analysis showed innovators were more receptive, experimenting, professionally active, and had a higher sense of power. Multiple regression identified personal and organizational variables predictive of receptivity. Receptive teachers differed from innovators in their uncertainties about principal support and their power to influence school decisionmaking. Results suggest that it may be possible to manipulate variables associated with receptivity to encourage teachers to assume the risks of change.

Background

Large amounts of money, time, and energy are absorbed by development, dissemination, and implementation of educational change. The generally acknowledged failures of two decades of school reform and apparent evolution of theoretical perspectives on change call for modification of efforts to make change in schools. "Mutual adaptation" or recognizing needs of users in their institutional settings, is the strategy proposed by the Rand Change Agent Study (McLaughlin & Marsh, 1978:77).

Secondary teachers in their small, low-enrollment districts were the focus of the study of relationships between organizational and personal characteristics and responses to innovation. The need for change may be more acute in small schools because dependence upon urban-developed, mass production models is already limiting their ability to offer comprehensive programs (Sederberg, 1979). A study by the Center for Educational Policy Studies indicated that when enrollments drop below 300 in grades 7-12, districts cannot afford to provide a comprehensive secondary program using traditional grade-level, subject-matter groups (CEPS, 1979:19). A growing small school literature and, to a lesser extent, the alternative school literature suggest the options available: individualized and small-group learning; cross-age grouping; peer teaching; minicourses; effective use of technology; shared programs, staff and services; and community-based or action learning (Dunne, 1977; Gjelten, 1978; Tremlett, 1961; Deal, 1978; and Bussard & Green, 1981).

Teachers were studied because:

1. Change from mass production models to more individualized approaches requires a change in teacher role.

2. Teacher commitment has had the most consistently positive relationship to innovative project outcomes (McLaughlin & Marsh, 1978:71).

3. Organizational characteristics of small schools increase the program influence of teachers. For example: Administrative tenure is short; curriculum is typically unwritten; and single-teacher departments isolate staff from others in their field of specialization. Program losses, inadequate change responses and need for alternatives are part of the immediate small school future and to a somewhat lesser extent, the futures of larger schools outside rural areas.

Related Studies

It is widely recognized that response of teachers to change cannot be anticipated or understood without attention to the institutional factors that help determine the work-role behavior of teachers (Miles, 1980; Sarason, 1971; Runkel, et al., 1980).

Most studies of receptivity to change have been searches for personal correlates of receptivity, focusing on individual attitudes but ignoring the context for change. Giacquinta (1975:39) saw "the core of a promising theory" in studies that linked groups' receptivity to change to perception of risk to their status in an organization's hierarchy. To explain variations in receptivity within the same status category (teacher), Giacquinta identified both personal factors and organizational perceptions as variables affecting perceived risk. His working model of

receptivity theory is based on the following premises: (1) All innovations contain varying degrees of risk. (2) An organizational member's receptivity to any innovation is a function of perceived risk to his or her status. (3) Assuming that people want to minimize risks (and maximize benefits), the higher one perceives the risk (and the lower the benefits), the lower his or her receptivity.

Bridges' (1968) work with teacher receptivity to change addressed two measurement problems: that prior inquiry on receptivity focused on specific innovations and was, thus, not generalizable and that attitudes expressed had to be translated by the researcher into probable behavior. Basing receptivity research on the concept of willingness to make work-related changes, he developed a scale reflecting varying circumstances associated with innovation: degree of uncertainty, energy requirements and amount of role change. Respondents reported their own likely behavior from five alternatives, given each combination of demands. Review and analysis of educational change literature, organizational development literature and more than 30 studies of receptivity to change, change proneness, openness to innovation, or correlates of successful innovation suggested promising variables for theory-based exploratory studies.

Study Design

Objectives

The specific objectives of the study's survey were defined by the following research questions:

1. Can receptivity to change scores as measured by the Bridges Receptivity to Change Scale (BRCS) be used as an indication of willingness

to change delivery of instructional services? That is, does the BRCS discriminate between a group of "known innovators" (identified by grant funding agencies) and other teachers from the same population of small schools?

2. What relationships exist among BRCS scores and the following predictor variables:

A. Personal (Personality characteristics, age, sex, experience, professionalism, and mobility).

B. Organizational (Perception of power to influence decision-making, perception of peer and principal support, recognition of need, and sense of efficacy)?

Subjects

A population of small rural schools with fewer than 350 students in grades 7-12 was identified through a project at the Center for Educational Policy Studies at the University of Minnesota. Ten superintendents agreed to allow researcher contact with teachers in their schools. Eighteen secondary teachers involved in innovative projects were identified by funding agency representatives and contacted by telephone to request their participation.

The ten secondary schools in the study enrolled from 96 to 339 students in six grades and employed nine to 25 teachers. All had a range of teacher experience and age, a majority of male faculty members (63% to 37%), and teacher roles that reflected the diversity demanded in small schools. Primary teaching assignments represented all areas of comprehensive programming except foreign languages.

The entire population of teachers in the ten small schools was included in the study for several reasons: (1) The small size of faculty groups, (2) The greater role diversity which made it difficult to select and control for attitudes related to subject areas or teaching assignments, (3) Length of the survey (50 minutes completion time) requiring personal contact with the researcher to motivate high return rates, and (4) Superintendents' interest in group results. The design of the study with variables of interest is overviewed in Figure 1.

(Figure 1 about here)

Measures

The survey questionnaire, consisting primarily of instruments and items that had been used in prior studies, included the Bridges Receptivity to Change Scale and the Moeller Sense-of-Power Scale. Both were short, dealt specifically with key issues, and had acceptable validation studies. Bridges' scale identifies conditions of risk associated with curricular and work-role changes. Moeller's items go beyond merely assessing participation in decision-making to the more important level of influence. The Cattell 16PF, Form C, was chosen to measure personality because its content, length and validity were the best combination available. Other variables were measured by items selected from the Rand Change Agent Study (Berman & McLaughlin, 1975) and Dunne's (1981) small-school study. Researcher-generated items were reviewed by a jury before conducting pre-pilot and pilot tests. Instruments and instructions were mailed to innovators as the researcher went into the field to survey teachers in March of 1981.

Data Analysis

Scale scores were calculated for all respondents. The Statistical Package for the Social Sciences provided sub-programs for data analysis.

Results

Analysis of Receptivity to Change Scores

The first task for analysis was whether or not the Bridges Receptivity to Change Scale could be used as an indicator of willingness to change delivery of instructional services. Discriminant analysis of individual scores showed that receptivity scores did discriminate between known innovators and other teachers. Scores calculated according to Bridges' method on a scale of 0 to 7 are presented in Table 1.

(Table 1 about here)

Fifty teachers or 38 percent of the sample had receptivity scores similar to innovators indicating that some teachers not currently involved in innovative projects could be open to change. Acceptable conditions of risk were similar for the two groups with differences in degree. Changes reported likely to gain support of most experienced innovators were those that have been used with promising results elsewhere, especially in nearby districts. Also, favored were innovations that required little disturbance of current practices and might include a summer or more of training at government or district expense. Over 70 percent of innovators would participate in changes that required planning and working with other teachers.

Relationships Among Receptivity Scores and Predictor Variables

Innovators and Other Teachers.

Significant differences between innovators and other teachers were found with five other variables in addition to receptivity. They were: perceptions of power to influence decisionmaking, response to specific innovations, professionalism, age, and personality factor Q1 which found innovators to be more experimenting. Discriminant analysis of responses to the six variables showed that 84 percent of respondents could be correctly classified as either innovators or other teachers.

Innovators favored more choices of specific innovation. Their preferences, however, were somewhat different from other groups. They tended to favor curricular or instructional changes while those with low receptivity preferred consolidation. Technological innovations and changes requiring teachers to travel between schools were among those with least support. Table 2 summarizes four groups' innovations of choice.

(Table 2 about here)

Both innovators and teachers reported high levels of power to make classroom decisions; but innovators felt significantly more power to influence administrative decisions and district policies related to teaching. Innovators were more involved in professional activities related to their teaching responsibilities. These included possession or pursuit of advanced degrees, course attendance, paid memberships in professional organizations, attendance at conferences and workshops, publication of articles, and receipt of development grants.

Innovators were older than other teachers and reported more teaching experience both in the local district and other districts. Results with the personality factor Q1 showed innovators as more experimenting and analytical while teachers were associated with more conservative attitudes. Research evidence suggests that Q1+ people are more well-informed, more interested in leading people and more inclined to experiment with solutions to problems (Cattell, et al., 1970:104).

Female Teachers and Innovators.

There were sex-based differences in results that precluded single group analysis of relationships among predictor variables. Although differences were not significant, females were slightly more receptive to change, were somewhat more group-identified, and felt a lower sense of power. Multiple regression analysis revealed a strong female pattern predictive of receptivity. Nine individual variables and two combination variables, created because of suspected curvilinear or interactive relationships, reached significance levels. The personality factor scale scored females with higher receptivity to change as more intelligent, more group-identified, more relaxed and less tense, and more experimenting. They also favored more specific innovations, were more mobile, and were young or moderately older. While they felt more power in their own classrooms, they were less certain of principal support and power to influence administrators. The variables in combination account for 69 percent of the variation in receptivity scores.

Male Teachers and Innovators.

Analysis of male scores centered around some of the same predictor variables as in regression analysis of female scores but with differences

in interactions and significance. Four variables were significant and one was close to significance: high receptives felt less power to influence school decisions, were characterized as more trusting and less certain of principal support, and favored more specific innovations. As Table 6 shows, variables accounted for 39 percent of the variation in receptivity scores. The personality factor showing high receptives as more group-identified was close to significance levels.

Male Teachers Only.

In a search for more information on predictors of male receptivity, a discriminant analysis of high scoring male teachers (5, 6, 7 on BRCS) and low scoring male teachers (0, 1, 2 on BRCS) was performed. Male innovators were excluded because of their higher power scores. Four variables reached significance levels showing that male high scorers were more accepting of specific innovations, perceived less principal support, and felt they knew less of what was happening at administrative levels. They also were more group identified, that is, they preferred to work and make decisions with other people. A fifth personality variable suggesting that high scorers are more trusting and adaptable almost reached significance at a .056 level. Using discriminant analysis of these five variables, 80 percent of respondents were deemed correctly classified into high and low groups.

Why regression analysis of female scores resulted in a more complete pattern of predictor variables than regression analysis of male scores cannot be ascertained from these data. While similarities in male and female response patterns exist (findings were similar on four variables),

some of the differences call for attention to sex as a variable in studies of small-school teachers and the small-school environment.

Implications for Practice

The two most important aspects of this study were: (1) Its focus on the teacher in the school context as central to improved use of educational resources. (2) Its recognition that teacher willingness to change is related to perception of risk involved in change. The study was designed to provide data from which generalizations could be made about:

1. The level of teacher willingness to incur job-related change (Receptivity),

2. Conditions of risk acceptable to teachers (Conditions of Risk), and

3. Variables administrators could manipulate to encourage receptivity (Significant Variables).

Findings support a developing theory of receptivity to change as a function of risk. The task for administrators, then, becomes to encourage risk-taking among teachers--people involved in an occupation characterized by uncertainty and in organizations structured to support non-risking behaviors (Lortie, 1975; Miles, 1969). While results of this study cannot be widely generalized from a limited population, predictor variables that could be manipulated by administrators were identified in the data analysis. Significant variables provide structure for a discussion of conclusions and recommendations.

Receptivity

The Bridges Receptivity to Change Scale was successful in measuring differences in receptivity to work-role change. Innovators had significantly higher scores than other teachers, yet some teachers resembled high-scoring innovators as one would expect. Mean scores were lower for teachers in this survey than for Bridges' (1968) and Peck's (1969) studies which included urban and/or suburban participants. If the norms of small schools and the rural community climate are conservative and status quo oriented, as rural studies suggest, lower receptivity scores would be expected. All schools, however, had some teachers with expressed willingness and there was sufficient interest in the population studied to warrant administrative attempts to nurture receptivity to change. Determining conditions of risk acceptable to teachers can identify possible consequences of change before change is attempted. Such attention is conserving of the limited human and economic resources in small schools.

Conditions of Risk

Conditions of risk acceptable to high percentages of respondents varied in degree rather than kind. They were: familiarity with proposed changes, an innovation's record of success, provision of necessary training and assistance, and little disturbance of current roles. A list of specific innovations showed differing patterns of support. Preferred innovations of those with higher receptivity were curricular or instructional changes while pairing or consolidation, presumably because they preserve traditional mass production approaches to teaching, were most popular among those measured least willing to take the risks of

change. Technological changes were not highly-favored by any group presumably because they are new and, thus, do not meet generally acceptable conditions of risk.

Two findings are especially important to decision-makers: (1) Teachers supported a broader range of options than is generally being considered in schools like those surveyed. (2) Many teachers who were unwilling to check "initiate" or "volunteer for" change indicated they would try a change "if asked." The latter suggests that teachers are well aware of the risks involved in change and desire to see the risk shared with others. Guarantees from administrators and boards which minimize risk to teachers could increase positive responses to change.

Significant Variables

Power and Principal Support.

Innovators had a higher sense of power to influence decisionmaking outside of the classroom. Scores of all groups suggest that innovators' higher power scores have some direct relationship to their innovative activity. As in Moeller's (1962) studies, females had somewhat lower power scores then males. Teachers with the highest receptivity to change were less certain of their power, particularly that relating to knowledge of administrative decisionmaking, and less certain of principal support. These results would seem to be explained by a higher need for knowledge and support to offset risks they are willing to take. The more conservative norms observers see in small schools could intensify that need and may have to be offset by more overt assurances of support.

The goal is to increase teacher receptivity to work-role change by lowering the risks of change. Receptivity then should be encouraged

where teachers are included in diagnosis of problems, are involved in consensual decisionmaking, and experience trust and support in relationships with administrators.

Professionalism.

High professionalism scores of innovators were a significant contrast to teacher scores. This study becomes one of many citing relationships between innovation and a range of professional activities from course-taking to conference attendance. The generally low boundary permeability of schools in this study suggests a need for administrative and board intervention to encourage and support professional activities that bring in new ideas.

The fact that teaching was institutionalized as high turnover work has served to bring new life to small schools in the form of new teachers. With declining demand and declining mobility, this revitalizing no longer occurs. Limited resources, multiple teaching assignments, and geographic isolation compound problems of staff development and program revision. Strategies to cope with isolation and stagnation could include partnerships with other districts and the service agencies available--regional units, state departments of education, colleges and universities, and teachers' professional organizations (Neale, et al., 1981). The most popular innovation in the study (supported by 80 percent of innovators and teachers) was creation of interdistrict departments that could pool resources and bring teachers stimulating contact with other specialists in their fields.

Age, Mobility.

Findings that innovators are older, more experienced and less mobile than other teachers are encouraging. Hope for adaptive, more innovative small schools is revived by knowl[illegible]that some persons likely to remain in small schools are involved in w[illegible]role change and professional activity. If the climate for change in small communities is conservative, the risks of change may be less for those teachers who have maturity and a local identification.

While receptive females were both the younger and the moderately older, they were also more mobile. Their mobility poses two problems for small schools: (1) Schools may be losing a change resource that cannot be replaced because of decline. (2) Schools may be shifting the balance of males to females to an even less favorable proportion than the 63% to 37% in the schools studied.

Personality Characteristics.

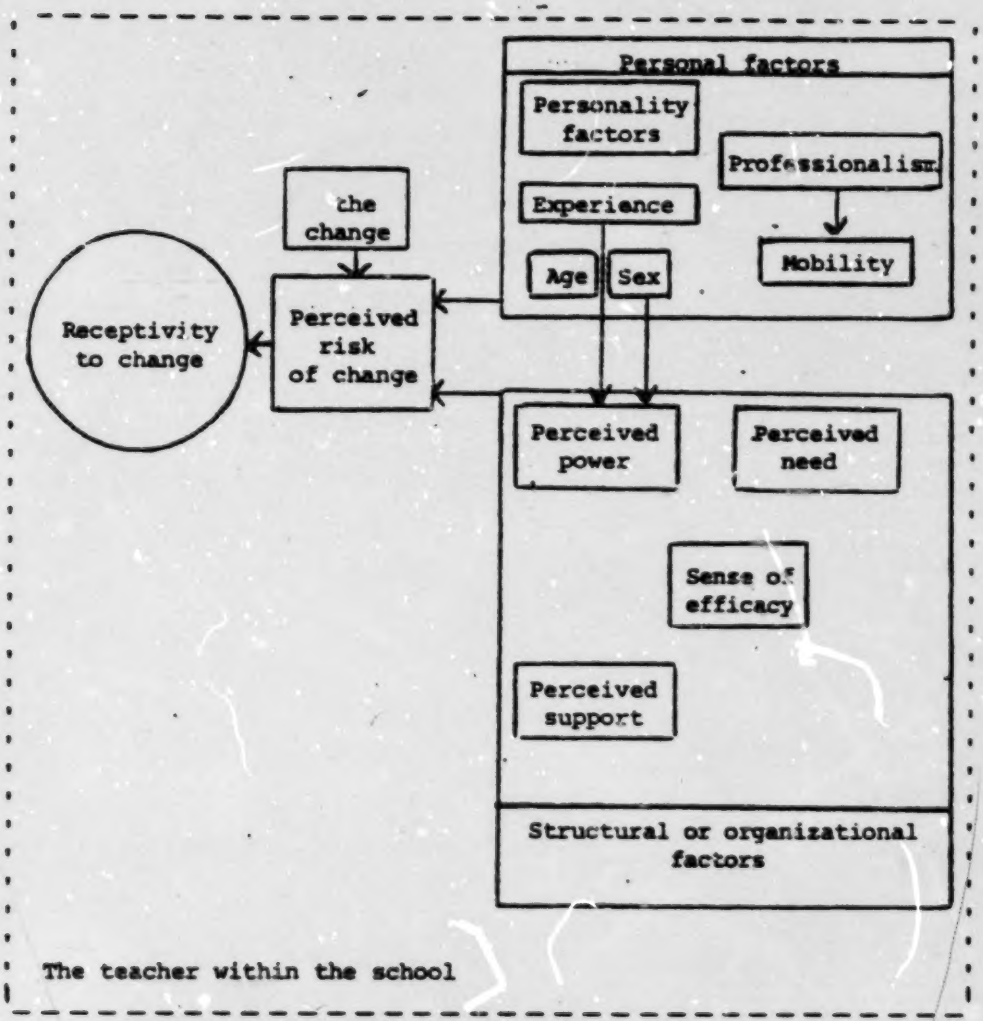
Management techniques to reward experimenting behavior and promote group-identification should be instituted in schools desiring to lessen perception of risk and to increase teacher receptivity to change. Significant in most analyses were personality factors which associated experimenting behavior and group-identification with teachers who had high receptivity to change scores. The fact that secondary schools generally are perceived as encouraging status quo behaviors and the independence associated with specialization presents a special challenge to administrators desiring to create more adaptive organizations.

Findings of this exploratory study support the theoretical association of receptivity to work-role change with personal and organizational

factors affecting individual perceptions of the risk involved in change. While some questions related to male and female response differences merit further investigation, there is, it seems, sufficient evidence to warrant attempts by administrators to assess receptivity to work-role change and to nurture its growth in small secondary schools. All schools in the population surveyed had teachers receptive to change. To lessen risk for teachers and stimulate adaptive behaviors administrators should consider: promoting group-identification and experimenting behavior, encouraging professional activities and teacher influence in decision-making, and communicating clear messages of support for needed change.

Figure 1

Design of the Study



(arrows indicate relationships supported by empirical research)

Table 1

An Analysis and Classification of Receptivity Scale Scores of Innovators and Other Teachers

A. Descriptive Statistics

Group	Mean	SD
Small-school teachers	3.87	1.87
Innovators	4.88	1.69
TOTAL	3.99	1.88

B. Discriminant Analysis

Wilks Lambda	F ratio	df	p
.97	4.478	1/146	.0360

C. Classification Summary

Actual Group	N of Cases	Predicted Group Membership Teachers	Innovators
Small-school teachers	131	81/62%	50/38%
Innovators	17	7/41%	10/59%

Percent correctly classified = 61.5%

Table 2

Four Groups' Innovations of Choice:
Percent Who Would Initiate or Volunteer for a Trial

	Innovators Group 7	Teachers Group 5	High Receptives	Low Receptives
Group Means 0-10	7.47	6.02	7.12 male 7.77 fem.	4.56 male 5.71 fem.
27. pair, consolidate	41 <u>10</u>	69 <u>2</u>	72 <u>6</u>	58 <u>2</u>
28. travel a day or two a week to other school	53 <u>9</u>	53 <u>8</u>	67 <u>8</u>	39 <u>7</u>
29. teach on TV or amplified phone	71 <u>7</u>	38 <u>10</u>	54 <u>10</u>	26 <u>10</u>
30. meet classes for longer blocks of time	59 <u>8</u>	60 <u>6</u>	71 <u>7</u>	53 <u>3</u>
31. supervise community-based course activities	88 <u>3</u>	59 <u>7</u>	80 <u>4</u>	39 <u>7</u>
32. supervise learning package developed elsewhere	94 <u>1</u>	47 <u>9</u>	63 <u>9</u>	37 <u>9</u>
33. learning center in a subject area	94 <u>1</u>	66 <u>3</u>	85 <u>2</u>	45 <u>6</u>
34. teach in an inter-disciplinary team	94 <u>1</u>	66 <u>3</u>	85 <u>2</u>	45 <u>6</u>
35. form inter-district departments by subject areas	82 <u>5</u>	81 <u>1</u>	87 <u>1</u>	68 <u>1</u>
36. design & supervise independant study	82 <u>5</u>	61 <u>5</u>	73 <u>5</u>	53 <u>3</u>

__ Underlined numbers indicate rank ordering of items.

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